COMPLETION OF MICROSCOPIC MODEL OF TRAFFIC FLOW USING LORENZ SYSTEM WITH VARIATIONAL ITERATION METHOD

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ABSTRACT

This research aims to explain the microscopic model of traffic flow using lorenz system and explain the model using Variational Iteration Method.

The research was conducted by constructing microscopic model of traffic flow using Lorenz System, then observing to Ringroad South Street of Yogyakarta Special Region to find parameter value that will be used when simulating microscopic model of traffic flow. When we have obtained a microscopic model of traffic flow using Lorenz system, it will be determined the general solution of the model with the Variational Iteration Method. Furthermore, using the five initial values indicating the value of the distance deviation, the velocity deviation, and the acceleration time, will be simulated the existing model, and determine the MSE value of each iteration.

The result of this research is microscopic model of traffic flow with Lorenz system, and general solution of the model with Variational Iteration Method, and MSE value from simulation done. The simulation result shows a very small MSE average value, that is 0.000001932, meaning that the model used already matches the existing model

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Keywords :*Microscopic Model, Lorenz System, Traffic Flow, Variational Iteration Method*